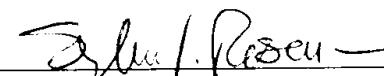


Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The first of the attached pages is captioned "Version with Markings to Show Changes Made."

Respectfully submitted,
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Application No. : 09/441,411
Docket No. : 730033.409

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

Paragraph beginning at page 8, line 15, has been amended as follows:

As noted above, the DNA vaccines of the present invention alter the magnitude (e.g., amount of antibody produced), duration and/or quality (e.g., affinity of antibody produced for SRA) of immune responses directed at specific SRA. Surface receptor antigens (SRA) as used herein refers to any cell surface molecule against which an immune response is sought. Such antigens may be cell surface molecules that are stable or transient plasma membrane components, including peripheral, extrinsic, secretory, integral or transmembrane molecules, as long as any portion of the SRA is exposed at the exterior aspect of the plasma membrane of the cell in which the SRA occurs. In particularly preferred embodiments, the SRA is a cell surface molecule of known structure and having a known or described function, including but not limited to SRA having any of the receptor activities described in references cited for the following cell surface receptors: HER1 (e.g., GenBank Accession Nos. U48722, SEG_HEGFREXS, KO3193), HER2 (Yoshino et al., 1994 *J. Immunol.* 152:2393; Disis et al., 1994 *Canc. Res.* 54:16; see also, e.g., GenBank Acc. Nos. X03363 (SEQ ID NOS: 5-6), M17730 (SEQ ID NOS: 7-8), SEG_HUMHER20 (SEQ ID NO: 9)), HER3 (e.g., GenBank Acc. Nos. U29339, M34309), HER4 (Plowman et al., 1993 *Nature* 366:473; see also e.g., GenBank Acc. Nos. L07868, T64105), epidermal growth factor receptor (EGFR) (e.g., GenBank Acc. Nos. U48722, SEG_HEGFREXS, KO3193), vascular endothelial cell growth factor (e.g., GenBank No. M32977), vascular endothelial cell growth factor receptor (e.g., GenBank Acc. Nos. AF022375, 1680143, U48801, X62568), insulin-like growth factor-I (e.g., GenBank Acc. Nos. X00173, X56774, X56773, X06043, see also European Patent No. GB 2241703), insulin-like growth factor-II (e.g., GenBank Acc. Nos. X03562, X00910, SEG_HUMGFI, SEG_HUMGFI2, M17863, M17862), transferrin receptor (Trowbridge and Omary, 1981 *Proc. Nat. Acad. USA* 78:3039; see also e.g., GenBank Acc. Nos. X01060,

M11507), estrogen receptor (*e.g.*, GenBank Acc. Nos. M38651, X03635, X99101, U47678, M12674), progesterone receptor (*e.g.*, GenBank Acc. Nos. X51730, X69068, M15716), follicle stimulating hormone receptor (FSH-R) (*e.g.*, GenBank Acc. Nos. Z34260, M65085), retinoic acid receptor (*e.g.*, GenBank Acc. Nos. L12060, M60909, X77664, X57280, X07282, X06538), MUC-1 (Barnes et al., 1989 *Proc. Nat. Acad. Sci. USA* 86:7159; see also *e.g.*, GenBank Acc. Nos. SEG_MUSMUCIO, M65132, M64928) NY-ESO-1 (*e.g.*, GenBank Acc. Nos. AJ003149, U87459), NA 17-A (*e.g.*, European Patent No. WO 96/40039), Melan-A/MART-1 (Kawakami et al., 1994 *Proc. Nat. Acad. Sci. USA* 91:3515; see also *e.g.*, GenBank Acc. Nos. U06654, U06452), tyrosinase (Topalian et al., 1994 *Proc. Nat. Acad. Sci. USA* 91:9461; see also *e.g.*, GenBank Acc. Nos. M26729, SEG_HUMTYR0, *see also* Weber et al., *J. Clin. Invest.* (1998) 102:1258), Gp-100 (Kawakami et al., 1994 *Proc. Nat. Acad. Sci. USA* 91:3515; see also *e.g.*, GenBank Acc. No. S73003, *see also* European Patent No. EP 668350; Adema et al., 1994 *J. Biol. Chem.* 269:20126), MAGE (van den Bruggen et al., 1991 *Science* 254:1643; see also *e.g.*, GenBank Acc. Nos. U93163, AF064589, U66083, D32077, D32076, D32075, U10694, U10693, U10691, U10690, U10689, U10688, U10687, U10686, U10685, L18877, U10340, U10339, L18920, U03735, M77481), BAGE (*e.g.*, GenBank Acc. No. U19180, *see also* U.S. Patent Nos. 5,683,886 and 5,571,711), GAGE (*e.g.*, GenBank Acc. Nos. AF055475, AF055474, AF055473, U19147, U19146, U19145, U19144, U19143, U19142), any of the CTA class of receptors including in particular HOM-MEL-40 antigen encoded by the SSX2 gene (*e.g.*, GenBank Acc. Nos. X86175, U90842, U90841, X86174), carcinoembryonic antigen (CEA, Gold and Freedman, 1985 *J. Exp. Med.* 121:439; see also *e.g.*, GenBank Acc. Nos. SEG_HUMCEA, M59710, M59255, M29540), and PyLT (*e.g.*, GenBank Acc. Nos. J02289, J02038).

Paragraph beginning at page 15, line 12, has been amended as follows:

Thus, in particularly preferred embodiments, the accessory cell agent is an accessory cell surface molecule of known structure and having a known or described function, including but not limited to accessory cell agents having any of the immune cell activation, adhesion, receptor/recognition, enzymatic or other activities described in references cited for the following

cell surface receptors: CD59 (e.g., GenBank Acc. Nos. SEG_HUMCD590, M95708, M34671), CD48 (e.g., GenBank Acc. Nos. M59904), CD58/LFA-3 (e.g., GenBank Acc. No. A25933, Y00636, E12817; see also JP 1997075090-A), CD72 (e.g., GenBank Acc. Nos. AA311036, S40777, L35772), CD70 (e.g., GenBank Acc. Nos. Y13636, S69339), CD80/B7.1 (Freeman et al., 1989 *J. Immunol.* 43:2714; Freeman et al., 1991 *J. Exp. Med.* 174:625; see also e.g., GenBank Acc. Nos. U33208, I683379), CD86/B7.2 (Freeman et al., 1993 *J. Exp. Med.* 178:2185, Boriello et al., 1995 *J. Immunol.* 155:5490; see also, e.g., GenBank Acc. Nos. AF099105 (SEQ ID NO: 10), SEG_MMB72G (SEQ ID NOS: 11-15), U39466 (SEQ ID NOS: 16-20), U04343 (SEQ ID NOS: 21-22), SEG_HSB725, L25606 (SEQ ID NOS: 23-24), L25259 (SEQ ID NOS: 25-26)), CD40 ligand (e.g., GenBank Acc. Nos. SEG_HUMCD40L, X67878, X65453, L07414), IL-17 (e.g., GenBank Acc. Nos. U32659, U43088), CD43 (e.g., GenBank Acc. Nos. X52075, J04536) and VLA-4 ($\alpha_4\beta_7$) (e.g., GenBank Acc. Nos. L12002, X16983, L20788, U97031, L24913, M68892, M95632). Accessory cell agents may also include any of the following cell surface receptors typically associated with B cells: CD19 (e.g., GenBank Acc. Nos. SEG_HUMCD19W0, M84371, SEG_MUSCD19W, M62542), CD20 (e.g., GenBank Acc. Nos. SEG_HUMCD20, M62541), CD22 (e.g., GenBank Acc. Nos. I680629, Y10210, X59350, U62631, X52782, L16928), CD30 ligand (e.g., GenBank Acc. Nos. L09753, M83554), CD37 (e.g., GenBank Acc. Nos. SEG_MMCD37X, X14046, X53517), CD106 (VCAM-1) (e.g., GenBank Acc. Nos. X53051, X67783, SEG_MMVCAM1C, *see also* U.S. Patent No. 5,596,090), CD54 (ICAM-1) (e.g., GenBank Acc. Nos. X84737, S82847, X06990, J03132, SEG_MUSICAM0), interleukin-12 (see, e.g., Reiter et al., 1993 *Crit. Rev. Immunol.* 13:1, and references cited therein). Accessory cell agents may also include any of the following cell surface receptors typically associated with dendritic cells: CD83 (e.g., GenBank Acc. Nos. AF001036, AL021918), DEC-205 (e.g., GenBank Acc. Nos. AF011333, U19271).

Paragraph beginning at page 21, line 27, has been amended as follows:

The polypeptides of the present invention include SRA/IRAM polypeptides and fusion proteins having amino acid sequences that are identical or similar to sequences known in the art. For example by way of illustration and not limitation, the human HER2 SRA, CD86 IRAM

and 4-1BB ligand IRAM polypeptides (HER2: *e.g.*, GenBank Acc. Nos. X03363 (SEQ ID NOS: 5-6), M17730 (SEQ ID NOS: 7-8), SEG_HUMHER20 (SEQ ID NO: 9); CD86/B7.2: Freeman et al., 1993 *J. Exp. Med.* 178:2185, Boriello et al., 1995 *J. Immunol.* 155:5490; see also, *e.g.*, GenBank Acc. Nos. AF099105 (SEQ ID NO: 10), SEG_MMB72G (SEQ ID NOS: 11-15), U39466 (SEQ ID NOS: 16-20), U04343 (SEQ ID NOS: 21-22), SEG_HSB725, L25606 (SEQ ID NOS: 23-24), L25259 (SEQ ID NOS: 25-26); 4-1BB ligand: Goodwin et al., 1993 *Eur. J. Immunol.* 23:2361; Melero et al., 1998 *Eur. J. Immunol.* 3:116), are contemplated for use according to the instant invention, as are polypeptides having at least 70% similarity (preferably a 70% identity) and more preferably 90% similarity (more preferably a 90% identity) to the reported polypeptides and still more preferably a 95% similarity (still more preferably a 95% identity) to the reported polypeptides and to portions of such polypeptides, wherein such portions of an SRA/IRAM polypeptide generally contain at least 30 amino acids and more preferably at least 50 amino acids.

In the claims:

Claims 10 and 11 have been amended to read as follows:

10. (Amended) The composition of claim 9 wherein Her2/Neu comprises a polypeptide sequence selected from the group consisting of sequences set forth in GenBank Acc. Nos. X03363 (SEQ ID NO: 6), M17730 (SEQ ID NO: 8), and SEG_HUMHER20 (SEQ ID NO: 9).

11. (Amended) The composition of claim 9 wherein CD86/B7.2 comprises a polypeptide sequence selected from the group consisting of sequences set forth in GenBank Acc. Nos. AF099105, SEG_MMB72G (SEQ ID NOS: 11-15), U39466 (SEQ ID NOS: 16-20), U04343 (SEQ ID NO: 22), SEG_HSB725, L25606 (SEQ ID NO: 24), and L25259 (SEQ ID NO: 26).